

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 03 July 2000 (03.07.00)	
International application No. PCT/SE99/02151	Applicant's or agent's file reference TP 1301
International filing date (day/month/year) 23 November 1999 (23.11.99)	Priority date (day/month/year) 26 November 1998 (26.11.98)
Applicant ANDERSSON, Thorbjörn et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

30 May 2000 (30.05.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Manu Berrod Telephone No.: (41-22) 338.83.38
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PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference TP 1301	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/SE 99/02151	International filing date (day/month/year) 23 November 1999	(Earliest) Priority Date (day/month/year) 26 November 1998
Applicant Tetra Laval Holdings & Finance SA et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).
2. ☐ Unity of invention is lacking (See Box II).
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 - ☐ filed with the international application.
 - ☐ furnished by the applicant separately from the international application,
 - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - ☐ transcribed by this Authority.
4. With regard to the title, ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - ☒ the text is approved as submitted by the applicant.
 - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
Figure No. --
 - ☐ as suggested by the applicant.
 - ☐ because the applicant failed to suggest a figure.
 - ☐ because this figure better characterizes the invention.☐ None of the figures.

1
INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/02151

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B32B 5/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0590465 A1 (THE PILLSBURY COMPANY), 6 April 1994 (06.04.94), page 6, line 5 - line 34; page 9, line 30 - line 34; page 18, line 40 - line 50	1,3-7,11-13, 16,29
Y	--	15,18,21, 25-28
Y	SE 380470 B (AB ZIRISTOR), 10 November 1975 (10.11.75)	15,18,21, 25-28
Y	US 5128196 A1 (MELVIN L. LUETKENS, JR. ET AL), 7 July 1992 (07.07.92), column 7, line 27 - line 35; column 7, line 45 - line 52; column 12, line 19 - line 24	1-2,4-5, 11-12,14, 16-17,19-20, 22-24,29-31
	--	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

2 March 2000

Date of mailing of the international search report

14 -03- 2000

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Helena Danielsson/Els

Telephone No. +46 8 782 25 00

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 99/02151

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 9515257 A1 (PLM AB), 8 June 1995 (08.06.95), page 7, line 11 - line 14 --	1-2,4-5, 11-12,14, 16-17,19-20, 22-24,29-31
A	SE 468635 B (TETRA ALFA HOLDINGS SA), 22 February 1993 (22.02.93) -- -----	1-14,16-17, 19-20,22-23, 29-31

INTERNATIONAL SEARCH REPORT
Information on patent family members

02/12/99

International application No.

PCT/SE 99/02151

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
EP	0590465	A1	06/04/94	CA	2106501 A	25/03/94
				DE	69309829 D,T	31/07/97
				US	5500303 A	19/03/96
				US	5744247 A	28/04/98

SE	380470	B	10/11/75	JP	50084390 A	08/07/75
				SE	7315730 A	22/05/75

US	5128196	A1	07/07/92	AU	648550 B	28/04/94
				AU	7568791 A	10/10/91
				CA	2054772 A	17/09/91
				EP	0476097 A	25/03/92
				JP	4506195 T	29/10/92
				US	5221395 A	22/06/93
				US	5354402 A	11/10/94
				US	5462794 A	31/10/95
				WO	9113750 A	19/09/91

WO	9515257	A1	08/06/95	SE	502080 C	07/08/95
				SE	9303966 A	31/05/95

SE	468635	B	22/02/93	AT	129475 T	15/11/95
				AU	646129 B	10/02/94
				AU	1009092 A	16/07/92
				CA	2059034 A	10/07/92
				CS	9200063 A	15/07/92
				DE	69205590 D,T	21/03/96
				DK	494594 T	04/12/95
				EP	0494594 A,B	15/07/92
				SE	0494594 T3	
				ES	2079082 T	01/01/96
				GR	3017894 T	31/01/96
				HU	67174 A	28/02/95
				JP	4316839 A	09/11/92
				LT	1554 A	26/06/95
				LT	3858 B	25/04/96
				LV	11156 A,B	20/04/96
				RU	2053944 C	10/02/96
				SE	9100057 A	10/07/92
				SK	278835 B	04/03/98
				US	5248534 A	28/09/93

PATENT COOPERATION TREATY

09/856702

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

PERSSON, Eva
AB TETRA PAK
Ruben Rausing's gata
S-221 86 Lund
Sweden

PCT

WRITTEN OPINION

(PCT Rule 66)

2001-01-01

Date of mailing (day/month/year)		17-11-2000
Applicant's or agent's file reference TP 1301		REPLY DUE within 45 days from the above date of mailing
International application No. PCT/SE99/02151	International filing date (day/month/year) 23.11.1999	Priority date (day/month/year) 26.11.1998
International Patent Classification (IPC) or both national classification and IPC ₇ B 32 B 5/18		
Applicant Tetra Laval Holdings & Finance SA et al		

- This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
 - ☒ Basis of the report
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application
- The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 26.03.2001

Name and mailing address of the IPEA/SE
Patent- och registreringsverket
Box 5055
S-102 42 STOCKHOLM
Facsimile No. 08-667 72 88Telex
17978
PATOREG-S

Authorized officer

Helena Danielsson/Els
Telephone No. 08-782 25 00

WRITTEN OPINION

International application No.

PCT/SE99/02151

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".

WRITTEN OPINION

International application No.

PCT/SE99/02151

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-31</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>8-10</u>	YES
	Claims	<u>1-7, 11-31</u>	NO
Industrial applicability (IA)	Claims	<u>1-31</u>	YES
	Claims	_____	NO

2. Citations and explanations

The claimed invention relates to a multilayer material for packaging, as well as a method for the manufacturing thereof and packaging containers made therefrom. The problem to be solved is to find a multilayer material that is resistant against deflection and has good oxygen barrier properties.

The solution according to the invention is a material consisting of an intermediate layer of an expanded polymer between two other layers that work as oxygen gas barriers.

The following documents in the International Search Report were found to be relevant:

D1 EP 0590465 A1
D2 SE 380470 B
D3 US 5128196 A1
D4 WO 9515257 A1

According to D1 a composite for packing of oxygen sensitive products is known. The material can have an anaerobic intermediate layer of a foamed polymer material. The intermediate layer gives increased structural rigidity and improves also the material barrier properties against oxygen (see column 18, lines 40 - 50). The layer that surrounds the intermediate layer can be selected from materials which have barrier properties against oxygen, see especially column 6, lines 5 - 34, and column 9, lines 30 - 34.

.../...

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: V

The difference between the claimed invention and D1 is that the rigidity of the material disclosed in this document is not measured. However, the analogous construction of the materials implies that they also have the same range of rigidity.

Accordingly, the invention according to the claims 1, 3, 6, 11 - 13, 16 and 29 is considered not to involve an inventive step.

Document D2 discloses a packaging laminate with good rigidity including a core layer of foamed plastic material and layers of cardboard or paper and of thermoplastic materials. The laminate is characterised by that the core layer is coated with a layer of paper or cardboard and thereafter with a layer of thermoplastic material. Depending on the use of the material the core layer can be coated on either one or both sides. It is considered obvious for a skilled person skilled to use a core layer coated on both sides to achieve good rigidity through the generally known "sandwich-structure effect".

In view of D1, it is considered obvious for a person skilled in the art with the knowledge of D2, to construct a rigid multilayer material that includes a layer of expanded polymer provided on each side with a paper- or cardboard layer and then further coated with layers with good oxygen barrier properties.

Consequently, the claims 15, 18, 21 and 25-28 are considered not to involve an inventive step.

Further, document D3 relates to an intermediate layer of foamed thermoplastic provided with an external layer with good barrier properties against oxygen. The barrier layer consists of EVOH or copolymers of acrylonitrile. Adding a blowing agent at extrusion of the layer produces the foamed layer.

.../...

WRITTEN OPINION

International application No.

PCT/SE99/02151

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: V

Also document D4 discloses a packaging material consisting of a core layer of foamed thermoplastic. The foamed layer is provided on each side with a protective layer, which can be an oxygen barrier, see for instance the page 7, lines 11 - 14. The packaging material is primarily intended for the manufacturing of dimensionally stable liquidtight containers.

In view of D3, it is considered obvious for a person skilled in the art with the knowledge of D4 to make a lightweight material, which is resistant against deflection and have good barrier properties against oxygen by applying a layer with good oxygen barrier properties on each side of a core layer of foamed thermoplastic.

Therefore, the claims 1 - 2, 11 - 12, 16 - 17, 19 - 20, 22 and 29 are considered not to involve an inventive step.

What is claimed in the claims 4 - 5, 7, 14, 21, 23 - 28, and 30 - 31 differs from what is disclosed in the cited the documents essentially through subject matter obvious for a person skilled in the art.

In view of the above, the invention claimed in claims 1-7, 11-31 is considered not to involve an inventive step.

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ SE

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION	
Applicant's or agent's file reference TP 1301	
International application No. PCT/SE99/02151	International filing date (day/month/year) 23-11-1999
(Earliest) Priority date (day/month/year) 26 November 1998	
Title of invention Multilayer structure for packaging and packaging containers manufactured therefrom, as well as method for manufacturing of the multilayer structure	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.) TETRA LAVAL HOLDINGS & FINANCE SA Av. Général-Guisan 70 CH-1009 PULLY Switzerland	
Telephone No.: 41 217292211	
Facsimile No.: 41 217292759	
Teleprinter No.: 41 21455811	
State (that is, country) of nationality: CH	State (that is, country) of residence: Switzerland
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.) ANDERSSON, Thorbjörn Assarhusavägen 56 S-240 17 Södra Sandby Sweden	
State (that is, country) of nationality: SE	State (that is, country) of residence: Sweden
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.) OLSSON, Håkan Östra Odarslöv 601 S-225 92 Lund Sweden	
State (that is, country) of nationality: SE	State (that is, country) of residence: Sweden
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.	

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*PERSSON, Eva
AB TETRA PAK
Ruben Rausings gata
S-221 86 Lund, Sweden

Telephone No.:

046-36 18 25

Facsimile No.:

046-13 79 23

Teleprinter No.:

32140 TPLUND S

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filed

the description

☐ as originally filed☐ as amended under Article 34

the claims

☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34

the drawings

☐ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English

☐ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (<i>specify</i>) | : | sheets |

For International Preliminary
Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input type="checkbox"/> other (<i>specify</i>): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).



Eva Persson

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.

☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

PCT

FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

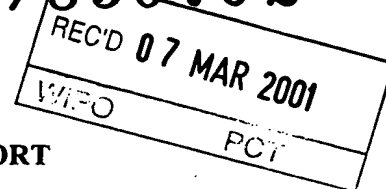
International application No. PCT/SE99/02151	For International Preliminary Examining Authority use only													
Applicant's or agent's file reference TP 1301	Date stamp of the IPEA													
Applicant <div style="text-align: center; font-weight: bold; margin-top: 10px;">TETRA LAVAL HOLDINGS & FINANCE SA</div>														
Calculation of prescribed fees														
1. Preliminary examination fee	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">4.200:-</div> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px; margin-left: 5px;">P</div>													
2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i>	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">1.270:-</div> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px; margin-left: 5px;">H</div>													
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">5.470:-</div>													
	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">TOTAL</div>													
Mode of Payment														
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"><input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)</td> <td style="width: 33%;"><input type="checkbox"/> cash</td> <td style="width: 34%;"></td> </tr> <tr> <td><input type="checkbox"/> cheque</td> <td><input type="checkbox"/> revenue stamps</td> <td></td> </tr> <tr> <td><input type="checkbox"/> postal money order</td> <td><input type="checkbox"/> coupons</td> <td></td> </tr> <tr> <td><input type="checkbox"/> bank draft</td> <td><input type="checkbox"/> other (specify):</td> <td></td> </tr> </table>			<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash		<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps		<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons		<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):	
<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash													
<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps													
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons													
<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):													
Deposit Account Authorization <i>(this mode of payment may not be available at all IPEAs)</i> The IPEA/ <u>SE</u> <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account. <div style="margin-top: 10px;"> <input type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account. </div>														
164020 Deposit Account Number	26 May 2000 Date (day/month/year)	<div style="text-align: center; margin-bottom: 5px;"> </div> Signature Eva Persson												

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference TP 1301	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE99/02151	International filing date (day/month/year) 23.11.1999	Priority date (day/month/year) 26.11.1998
International Patent Classification (IPC) or national classification and IPC ₇ B32B 5/18		
Applicant Tetra Laval Holding & Finance SA et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
<input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items:
I <input checked="" type="checkbox"/> Basis of the report
II <input type="checkbox"/> Priority
III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV <input type="checkbox"/> Lack of unity of invention
V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI <input type="checkbox"/> Certain documents cited
VII <input type="checkbox"/> Certain defects in the international application
VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 30.05.2000	Date of completion of this report 26.02.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Helena Danielsson/js Telephone No. 08-782 25 00

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE99/02151

I Basis of the report1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE99/02151

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-31</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>8-10</u>	YES
	Claims	<u>1-7, 11-31</u>	NO
Industrial applicability (IA)	Claims	<u>1-31</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention relates to a multilayer material for packaging, as well as a method for the manufacturing thereof and packaging containers made therefrom. The problem to be solved is to find a multilayer material that is resistant against deflection and has good barrier properties against oxygen.

The solution according to the invention is a material consisting of an intermediate layer of an expanded polymer between two other layers that work as oxygen gas barriers.

The following documents in the International Search Report were found relevant:

D1	EP 0590465 A1
D2	SE 380470 B
D3	US 5128196 A1
D4	WO 9515257 A1

According to D1, a composite for packing of oxygen sensitive products is known. The material can have an anaerobic intermediate layer of a foamed polymer material. The intermediate layer gives increased structural rigidity and improves the material barrier properties against oxygen (see column 18, lines 40 - 50). The layer that surrounds the intermediate layer can be selected from materials which have barrier properties against oxygen, see especially column 6, lines 5 - 34, and column 9, lines 30 - 34.

The difference between the claimed invention and D1 is that the rigidity of the material disclosed in this document is not measured. However, the analogous construction of the materials implies that they also have the same range of rigidity.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V

Accordingly, the invention according to the claims 1, 3, 6, 11 - 13, 16 and 29 is considered not to involve an inventive step.

Document D2 discloses a packaging laminate with good rigidity including a core layer of foamed plastic material and layers of cardboard or paper and of thermoplastic materials. The laminate is characterised by that the core layer is coated with a layer of paper or cardboard and thereafter with a layer of thermoplastic material. Depending on the use of the material the core layer can be coated on either one or both sides. It is considered obvious for a person skilled in the art to use a core layer coated on both sides to achieve good rigidity through the generally known "sandwich-structure effect".

In view of D1, it is considered obvious for a person skilled in the art with the knowledge of D2, to construct a rigid multilayer material that includes a layer of expanded polymer provided on each side with a paper- or cardboard layer and then further coated with layers with good oxygen barrier properties.

Consequently, the claims 15, 18, 21 and 25-28 are considered not to involve an inventive step.

Further, document D3 relates to an intermediate layer of foamed thermoplastic provided with an external layer with good barrier properties against oxygen. The barrier layer consists of EVOH or copolymers of acrylonitrile. Adding a blowing agent at extrusion of the layer produces the foamed layer.

Also document D4 discloses a packaging material consisting of a core layer of foamed thermoplastic. The foamed layer is provided on each side with a protective layer, which can be an oxygen barrier, see for instance the page 7, lines 11 - 14. The packaging material is primarily intended for the manufacturing of dimensionally stable liquid-tight containers.

In view of D3, it is considered obvious for a person skilled in the art with the knowledge of D4 to make a lightweight material, which is resistant against deflection and have good barrier properties against oxygen by applying a layer with good oxygen barrier properties on each side of a core layer of foamed thermoplastic.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE99/02151

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V (I)

Therefore, the claims 1 - 2, 11 - 12, 16 - 17, 19 - 20, 22 and 29 are considered not to involve an inventive step.

What is claimed in the claims 4 - 5, 7, 14, 21, 23 -28, and 30 - 31 differs from what is disclosed in the cited the documents essentially through subject matter obvious for a person skilled in the art.

In view of the above, the invention claimed in claims 1-7, 11-31 is considered not to involve an inventive step.